

## REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and the following remarks.

Upon entry of the foregoing amendments, claims 12 and 23-34 will remain pending in the application. Claims 12, 32 and 34 are currently being amended. No claims presently are being added or canceled.

It is acknowledged that the foregoing amendments are submitted after final rejection. However, because the amendments do not introduce new matter or raise new issues, and because the amendments either place the application in condition for allowance or at least in better condition for appeal, entry thereof by the Examiner is respectfully requested.

### The Claims Meet the Definite Claiming Requirement of 35 U.S.C. § 112, Second Paragraph

Claims 12, 23-31 and 33-34 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The rejected claims are drawn to polypeptides that comprise at least 90% identity to the amino acid sequence of SEQ ID NO: 2, but also lack amino acid residues 1-48, 49-294 or 295-807 of SEQ ID NO: 2. Because SEQ ID NO: 2 is only 807 amino acids in length, the Examiner reasoned that 90% identity can only exist if less than 81 amino acids of SEQ ID NO: 2 are missing. Therefore, the Examiner stated that the claims are nonsensical with regard to a polypeptide that lacks amino acid residues 49-294 or 295-807.

Without acquiescing to the rejection, Applicants have amended part (b) of claim 12 to clarify that one of the protein domains (the N-terminal, catalytic or C-terminal domain) is not considered for purposes of calculating sequence identity. Thus, the claim embraces a polypeptide that entirely lacks one protein domain, or that has a significantly different amino acid sequence across one domain. Specifically, part (b) of claim 12 now recites that a PTP04 polypeptide may have “an amino acid sequence comprising at least 90% identity to the amino acid sequence set forth in SEQ ID NO: 2, except that it lacks amino acid residues 1-48 or 295-807 of SEQ ID NO: 2.” Thus, claim 12 embraces, for example, a polypeptide having an amino acid sequence that is at least 90% identical to the sequence of residues 1-294 of SEQ ID NO: 2. Similarly, it embraces a polypeptide having an amino acid sequence that is at least

90% identical to the sequence of residues 49-807 of SEQ ID NO: 2. Exemplary support for the amendment to claim 12 exists in the specification at page 22, lines 11-23 .

Claim 34 also stands rejected as allegedly lacking antecedent basis for the recitation “said non-PTP-04 polypeptide.” Applicants have corrected the dependency of claim 34, thereby obviating this rejection.

Because amended claims 12, 23-31 and 33-34 comply with the definite claiming standard of 35 U.S.C. § 112, second paragraph, Applicants respectfully request withdrawal of these rejections.

The Claims Meet the Enablement Requirement of 35 U.S.C. § 112, First Paragraph

Claims 12, 23 and 25-34 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly lacking enablement. The Office Action acknowledges that the specification is enabling for polypeptides that comprise the amino acid sequence set forth in SEQ ID NO: 2, but contends that it is not enabling for polypeptides that contain only a fragment of SEQ ID NO: 2, or for polypeptides that are only 90% or 95% identical to SEQ ID NO: 2. In particular, the Office Action stated that the claims embrace species that will not exhibit phosphatase activity, because protein chemistry is unpredictable. Applicants respectfully traverse this rejection.

It appears that only a single utility of the claimed polypeptides improperly has been considered. For example, the Office Action states on page 6 that enablement is “narrowly based on the ability of one of skill in the art to use the polypeptide as [a] tyrosine phosphatase.” However, the specification also identifies other utilities for the polypeptides. For example, they are useful for identifying natural binding partners of PTP04, as described at page 52, line 15 - page 53, line 3 of the specification. Additionally, they are useful for generating anti-PTP04 antibodies, as described in Example 4 of the specification.

The MPEP states that when “multiple uses for claimed compounds or compositions are disclosed in the application, then an enablement rejection must include an explanation, sufficiently supported by the evidence, why the specification fails to enable each disclosed use.” MPEP 2164.01(c). That is, if any use is enabled when multiple uses are disclosed, the

application is enabling for the claimed invention. Applicants respectfully request withdrawal of the enablement rejection because all of the utilities for the claimed polypeptides were not considered.

Applicants also note that the claims, as amended, recite that the claimed polypeptide “possesses an enzymatic activity of a tyrosine phosphatase.” This obviates the Examiner’s concern that the claims may embrace polypeptides lacking tyrosine phosphatase activity. The determination of whether any given polypeptide actually has enzymatic activity of a tyrosine kinase would not require one of ordinary skill in the art to engage in undue experimentation because the specification provides an assay for doing so (page 26, line 21 - page 27, line 2).

The Claims Meet the Novelty Requirement of 35 U.S.C. § 102

Claims 12, 27 and 29 stand rejected as allegedly being anticipated under 35 U.S.C. § 102 by various prior art references: Dayton *et al.*, Matthews *et al.*, and Cheng *et al.* Each reference purportedly discloses a polypeptide that comprises a fragment of SEQ ID NO: 2. None of the fragments, however, meet every limitation of the rejected claims. Therefore, Applicants respectfully traverse the rejection.

Each of the cited references discloses a polypeptide having a small sequence of amino acids in common with SEQ ID NO: 2. However, the claims do not read on these polypeptides because the amount of sequence similarity is too small. For example, the polypeptide disclosed by Dayton contains the largest amount of similarity to SEQ ID NO: 2. It apparently has 80 amino acids from the catalytic domain (residues 49-294) of SEQ ID NO: 2. Thus, it contains only 32.5% of the amino acids from this single domain, much less than the 90% identity requirement recited in the claims.

Because the fragments disclosed in Dayton, Matthews and Cheng do not meet the limitation of the rejected claims, Applicants respectfully request withdrawal of the rejections based on anticipation.

Concluding Remarks

Applicants believe that the present application is now in condition for allowance, and request favorable reconsideration thereof.

If the Examiner believes that an interview would advance prosecution of the application, she is invited to contact the undersigned by telephone.

If there are any unaccounted fees due in connection with the filing of this Amendment, please charge the fees to our Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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